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## Results of Pump Schedule Monitoring - Thousand Springs and American Falls, Idaho

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**Abstract:** During the 2001 irrigation season, the Idaho Department of Water Resources (IDWR) Water Distribution Section conducted a study using HOBO data loggers to monitor and record pumping schedules from ground water irrigation wells upgradient of three spring gage sites: Curren Tunnel and Box Canyon Springs near Hagerman, and at a site south of Pingree near American Falls Reservoir. Pump data were compared with the spring flow data to evaluate any direct correlation. These pumping data and observed spring discharge were sufficient for use in multiple linear regressions analysis to show that a moderate correlation exists between groundwater pumping schedules and fluctuation in flows at Curren Tunnel and Box Canyon. Data acquired for the Pingree site contained numerous gaps and potential inaccuracies so that it could not be used in determining any relation. Multiple linear regression correlations analysis show that at least 50% and 60% of non-systematic or random variations in daily spring flow at the Curren and Box Canyon sites, respectively is explainable by groundwater pumping. Irrigation canal and lateral daily changes in water level also helps explain another 10% of the variation seen in the spring flow hydrographs. The hydrograph figure below shows typical results from the study.

